UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,121	09/23/2003	Sherif Yacoub	200207195-1	1995

22879   7590   11/21/2007
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
SAINT CYR, LEONARD

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
11/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>31 October 2007</u>.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

10/31/07 has been entered.

Response to Arguments

2.   Applicant's arguments filed 10/31/07 have been fully considered but they are not

persuasive.

Applicant argues that neither Bennett et al., nor Murveit et al., teach or suggest

receiving a speech utterance from a user and then extracting characteristics about the

user from content of the speech; and selecting a single one of the ASR engines to

recognize the speech utterance (Amendment, pages 6 – 8).

The examiner disagrees, Bennett et al., teach that a user calls into the system

and navigates the menus using control keywords and then starts a dictation process.

Additionally, a variety of recognizers are optimized for dictation may be available, for

example. If the system knows that the user is dictating a legal memo based on the

current state of the dialog, it may use the legal-dictation optimized recognizer

(paragraph 33, lines 8 – 21). Using the legal-dictation optimized recognizer for dictating

a legal memo implies receiving a speech utterance from a user and then extracting

characteristics about the user from content of the speech; and selecting a single one of

the ASR engines to recognize the speech utterance, since the recognizer is selected

based on the current state of the dialog.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1 – 8, 14 – 20 rejected under 35 U.S.C. 103(a) as being unpatentable

over Bennett et al., (US PAP 2002/0194000), in view of Murveit et al., (US Patent

7,058,573)

      As per claims 1, 8, and 14, Bennett et al., teach an automatic speech recognition

(ASR) that comprises:

      providing a plurality of categories ("American male") for different speech

utterances; assigning a different ASR engine to each category ("recognizers that have

good performance for American men southern accents be enabled") based on the ranks

of the ASR engines("select the best recognizer and its results"; paragraph 15, lines 6 –

9; paragraph 19; paragraph 20, lines 7 – 9; Abstract, lines 7, and 8);

processing the different speech utterances at different ASR engines ("the speech

recognition system enable some of the speech recognizers and received results";

abstract, lines 4 – 6)

receiving a first speech utterance ("receiving the input stream") from a first user;

(paragraph 12, lines 1, and 2; paragraph 19, lines 10 - 12); and

extracting characteristics about the first user from content of the first speech

utterance to classify the first speech utterance into one of the categories; and selecting

a single one of the ASR engines assigned to the category to which the first speech

utterance is classified to automatically recognize the first speech utterance ("a user calls

into the system and navigates the menus using control keywords and then starts a

dictation process. Additionally, a variety of recognizers are optimized for dictation may

be available, for example. If the system knows that the user is dictating a legal memo

based on the current state of the dialog, it may use the legal-dictation optimized

recognizer"; paragraph 33, lines 8 – 21).

However, Bennett et al., do not specifically teach receiving ground truths with

correct text for the different speech utterances; and comparing output from the each of

the different ASR engines with the ground truths to determine ranks of the different ASR

engines for accuracy in recognizing the different speech utterances.

Murveit et al., teach assuming the spoken input is the word, "Boston". The

assigned score is a probability or is related to the probability that the corresponding

expression correctly corresponds to the spoken input. The expression with the highest

assigned score or certainty is selected as the output (probability that the corresponding

expression correctly corresponds to the spoken input implies comparing output from the

each of the different ASR engines with the ground truths to determine ranks of the

different ASR engines for accuracy in recognizing the different speech utterances, since

the highest score is selected among all the assigned scores; col.2, lines 56, and 57;

col.5, lines 21 – 23; col.9, lines 22 – 24).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to assign scores based on expression correctly

corresponds to the speech input as taught by Murveit et al., in Bennett et al., because

that would maintain a high degree of recognition accuracy in a speech recognition

system (col.2, lines 33, and 34).

As per claims 2, and 15, Bennett et al., further disclose providing a plurality of

categories for different speech utterances further comprises providing a male category

and a female category ("gender"; paragraph 19, lines 10 – 12; paragraph 31, line 3).

As per claim 3, Bennett et al., further disclose assigning a different ASR engine

to each category further comprises assessing accuracy of each ASR engine for each

category (" accuracy of each recognizer in a particular situation"; paragraph 22, lines 8,

and 9).

As per claims 4, and 16, Bennett et al., further disclose assessing accuracy of

each ASR engine for each category further comprises determining a least Word Error

Rate of each ASR engine for each category ("a recognizer with a recognizer-based confidence value of 90%"; paragraph 42, lines 3, and 4).

As per claim 5, Bennett et al., further disclose assigning a different ASR engine to each category further comprises assessing time required for each ASR engine to recognize speech utterances ("performance over time"; paragraph 42, line – paragraph 43, line 3).

As per claim 6, Bennett et al., further disclose receiving a second speech utterance from a second user; classifying the second speech utterance into one of the categories; and selecting the ASR engine assigned to the category to which the second speech utterance is classified to automatically recognize the speech utterance, wherein the ASR engine assigned to the category to which the second speech utterance is classified is different from the ASR engine assigned to the category to which the first speech utterance is classified (using characteristics of the communication channel and contextual information such as gender to enable some of the recognizers among a plurality of recognizers, implies that it is inherent to classify another speech to another category; paragraph 20; paragraph 17; paragraph 31, line 3).

As per claim 7, Bennett et al., further disclose that the first speech utterance is classified into a male category, and the second speech utterance is classified into a female category ("gender"; paragraph 19, lines 10 – 12; paragraph 31, line 3).

As pre claim 17, Bennett et al., further disclose at least three different ASR engines and at least three different combination schemas of ASR engines to represent a total of at least six different ASR engines ("processing cell phone audio stream with some recognizers among multiple recognizers"; paragraph 10, lines 2, and 3; paragraph 16, lines 2 – 4).

As per claim 18, Bennett et al., further disclose that a telephone network comprising at least one switching service point coupled to the computer system ("output switch 16"; paragraph 4, lines 8 – 10; paragraph 10; paragraph 13, line 3).

As per claim 19, Bennett et al., further disclose that at least one communication device in communication with the switching service point to provide the speech utterance ("cell phone connection" paragraph 10; paragraph 13, line 3).

5.   Claims 9 – 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al., (US PAP 2002/0194000) in view of Murveit et al., (US Patent 7,058,573).

As per claims 9, and 20, Bennett et al., in view of Murveit et al., do not specifically teach storing a ranking matrix, the ranking matrix comprising a plurality of different categories of speech signals and a plurality of different ASR engine corresponding to the plurality of different categories.

However, since Bennett et al., teach selecting the recognizers that are better for cell phone audio streams than other recognizers (paragraph 16, lines 2 – 4), one having ordinary skill in the art would found it obvious to use a ranking matrix comprising a plurality of different categories of speech signals and a plurality of different ASR engine within Bennett et al., because that would determine the recognizers that would be enabled for a particular input stream (paragraph 16, lines 5, and 6).

As per claim 10, Bennett et al., further disclose different categories are selected from the group consisting of gender, noise level, and pitch ("signal strength"; paragraph 15, line 7; paragraph 31, line 3).

As per claim 11, Bennett et al., further disclose different ASR engines comprise single ASR engines ("single recognizer") and multiple ASR engines combined together (paragraph 21, lines 1, and 2; paragraph 20, lines 7, and 8).

As per claim 12, Bennett et al., further disclose the plurality of different ASR engine rankings are derived from statistical analysis ("performance history of the particular recognizer"; paragraph 23, line 5).

As per claim 13, Bennett et al., further disclose that the statistical analysis comprises assessing accuracy of speech recognition of different ASR engines with

different speech signals ("accuracy of each recognizer in a particular situation";
paragraph 22, lines 8, and 9).

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Leonard Saint-Cyr whose telephone number is (571)
272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone
number for the organization where this application or proceeding is assigned is (571)-
273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
11/15/07

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER